OIZOM®
REDEFINING RESOURCES

AQBot™

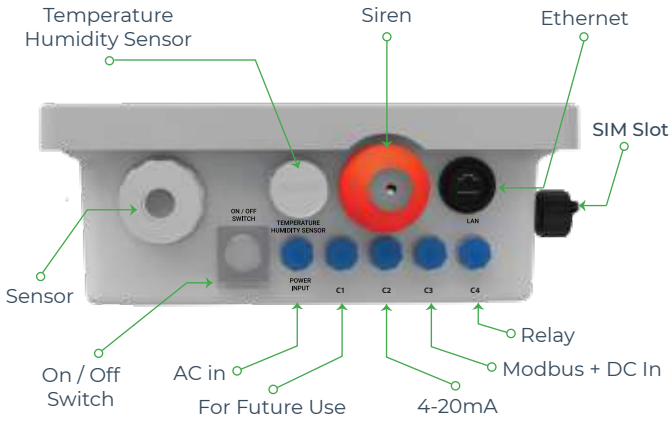
Industrial Grade Single Parameter Air Quality Monitor

About AQBot™

AQBot™ is an Industrial-Grade Single-Parameter air quality monitor with automation capabilities. It is compatible to monitor various critical environmental parameters like Toxic Gases, Particulate Matter, and Noise. This real-time air quality monitor allows industries to monitor what's crucial for them. It also has a display, siren, and strobe light system to get immediate alerts in critical situations. This system activates in real-time upon exceeding user-defined thresholds, providing a multi-sensory alert alongside software notifications.

CE FC PTCRB

The AQBot™ enclosure houses robust electronics that last long in extreme industrial conditions. It offers industry-standard connectivity options in addition to multiple modes of wired and wireless communications. Using a wide range of communication capabilities, AQBot™ bridges the gap between industrial communication and IIoT to improve processes and connect to existing systems that monitor processes or control plants.



Product Features

- Range of parameters to choose from
- On-device display
- Real-time data
- Visualisation and advanced analytics software
- Built-in relay for automation
- Siren and strobe light for alerts
- Compact
- IP 66 grade certified
- Wired commmunication
- Wireless commmunication
- Internal data storage
- Dedicated support

Key Benefits

Accurate Data
Gives accurate readings in real-time to detect concentrations in ambient air.

Robust And Rugged
Durable enclosure to sustain harsh industrial conditions.

Relay-Based Automation
In-built relay automation systems provide immediate alerts when the threshold limit rises and activate mitigation equipment.

Secure Cloud Platform
Secure platform for visualising and analysing data, with easy API integration for immediate action.

Easy to install
Effortless installation with versatile mounting arrangements.

Seamless Connectivity
Wide range of connectivity options like GSM, Wi-Fi, LoRa Modbus, Satellite, RS-485, and 4-20mA

AQBot™ Usecases

Leak Detection
Comprehensively detect leaks and monitor hazardous gases or harmful chemicals in real-time to trigger alarms when pre-set threshold are exceeded.

Environmental Automation
Improve your environmental process control by monitoring air pollution, odour and other environmental conditions on a real-time basis.

Wastewater
Monitoring odour intensity at waste water treatment plants can help regulate odour emission by appropriate maintenance on time.

Industrial EHS
Conduct environmental audits and improve your ESG scores by optimising environmental and occupational health and safety.

AQBot Variants

Parameter	ID	Range	Resolution	Min. Det.	Working Principle	Expected Sensor Life
Ammonia (NH_3)	OZNH3_1* OZNH3_2* OZNH3_3	0-20 ppm 0-100 ppm 0-1000 ppm	0.3 ppm 0.3 ppm 2 ppm	0.3 ppm 0.3 ppm 2 ppm	Electrochemical	2 Years
Methane (CH_4)	OZCH4_1 OZCH4_2	500-1500 ppm 50-10,00,000 ppm	1 ppm 1 ppm	500 ppm 500 ppm	Molecular Property Spectrometer (MPS)	2 Years
Hydrogen Sulfide (H_2S)	OZH2S_1* OZH2S_2 OZH2S_3 OZH2S_4	0-1.5 ppm 0-50 ppm 0-200 ppm 0-2000 ppm	0.001 ppm 0.05 ppm 0.2 ppm 2 ppm	0.01 ppm 0.05 ppm 0.2 ppm 2 ppm	Electrochemical	2 Years
Total Volatile Organic Compounds (VOC)	OZTVOC_1* OZTVOC_2	0-40 ppm 0-200 ppm	0.001 ppm 0.10 ppm	0.005 ppm 0.10 ppm	Photo Ionization Detection (PID)	2 Years #
Particulate Matter ($PM_{2.5}$, PM_{10}, PM_1, PM_{100})	OZPM_1*	Upto 5000 µg/m³ for PM_1, $PM_{2.5}$, PM_{10} Upto 30 mg/m³ for PM_{100}	0.1 µg/m³	1 µg/m³	Optical Particle Counter	18 Months
Noise	OZN_1*	Up to 140 dB	1 dB	0.5 dB	Capacitive	2 Years
Chlorine (Cl_2)	OZCl2_1* OZCl2_2	0-20 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
Hydrogen Chloride (HCl)	OZHCl_1 OZHCl_2	0-50 ppm 0-100 ppm	0.5 ppm 1 ppm	0.5 ppm 1 ppm	Electrochemical	2 Years
Formaldehyde (CH_2O)	OZCH2O_1* OZCH2O_2	0-10 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
Methyl Mercaptan (CH_3SH)	OZCH3SH_1*	0-10 ppm	0.1 ppm	0.1 ppm	Electrochemical	2 Years
Sulfur Dioxide (SO_2)	OZSO2_1* OZSO2_2 OZSO2_3	0-10 ppm 0-100 ppm 0-2000 ppm	0.001 ppm 0.2 ppm 5 ppm	0.01 ppm 0.2 ppm 5 ppm	Electrochemical	2 Years
Nitrogen Dioxide (NO_2)	OZNO2_1* OZNO2_2 OZNO2_3	0-10 ppm 0-100 ppm 0-500 ppm	0.001 ppm 0.2 ppm 0.5 ppm	0.01 ppm 0.2 ppm 0.5 ppm	Electrochemical	2 Years
Carbon Monoxide (CO)	OZCO_1* OZCO_4 OZCO_2 OZCO_3	0-5 ppm 0-50 ppm 0-100 ppm 0-1000 ppm	0.01 ppm 0.05 ppm 0.1 ppm 0.75 ppm	0.01 ppm 0.05 ppm 0.1 ppm 0.75 ppm	Electrochemical	2 Years
Nitric Oxide (NO)	OZNO_1* OZNO_2	0-5 ppm 0-100 ppm	0.001 ppm 0.5 ppm	0.01 ppm 0.5 ppm	Electrochemical	2 Years
Carbon Dioxide (CO_2)	OZCO2_1*	0-5000 ppm	1 ppm	400 ppm	Non-Dispersive Infrared	2 Years

TVOC Sensor Housing: 2 years, TVOC Lamp is user replaceable: 5,000 hours

Expected Sensor Life can vary, subject to actual concentration on-site. In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification.The data contained in this document is for guidance only, Oizom® accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within.

**Indicates standard delivery timeline*

Specifications

Mechanical

Size	210MM(W) x 258mm(H) X 105mm(D)
Weight	2.8 Kg (instrument weight)
Material	NEMA 4X Fire Retardant FRP Enclosure
Certifications	CE, IP66, RoHS
Installation Method	Pole Mount / Wall Mount

Electrical

Avg. Power Consumption	3.5 Watt (Actual consumption will vary upon the number of parameters)
Power Input Options	AC : External 90-265V AC, 50-60Hz DC : Uninterrupted 12V DC or 24V DC, 2 Ampere
Certifications	CE, RoHS, cURus UL, IEC/EN61000-4 and CISPR32/EN55032 & IEC/UL/EN62368 standard.

Technical

Processor	Quad Core ARM Cortex
Memory	2GB RAM / 8GB eMMC ROM
Device Interface	Display / On-device Software / API / Cloud Platform
Internal Data Storage	Up to 8 GB or 90 days

Environmental

Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-93% RH
Recommended Humidity	15-90% RH
Storage Conditions	10 - 40°C

Communication

Data Interval	2-30 minutes (configurable)
Data-push Protocol	HTTP post request to host server
Data-pull	HTTP request on device IP
Firmware Updates	Over-The-Air Firmware Update
Standby Connectivity	GSM (2G/3G/4G) for remote diagnosis, FOTA updates, and cloud calibration
Certification	PTCRB, CE, FCC, RoHS, ICASA

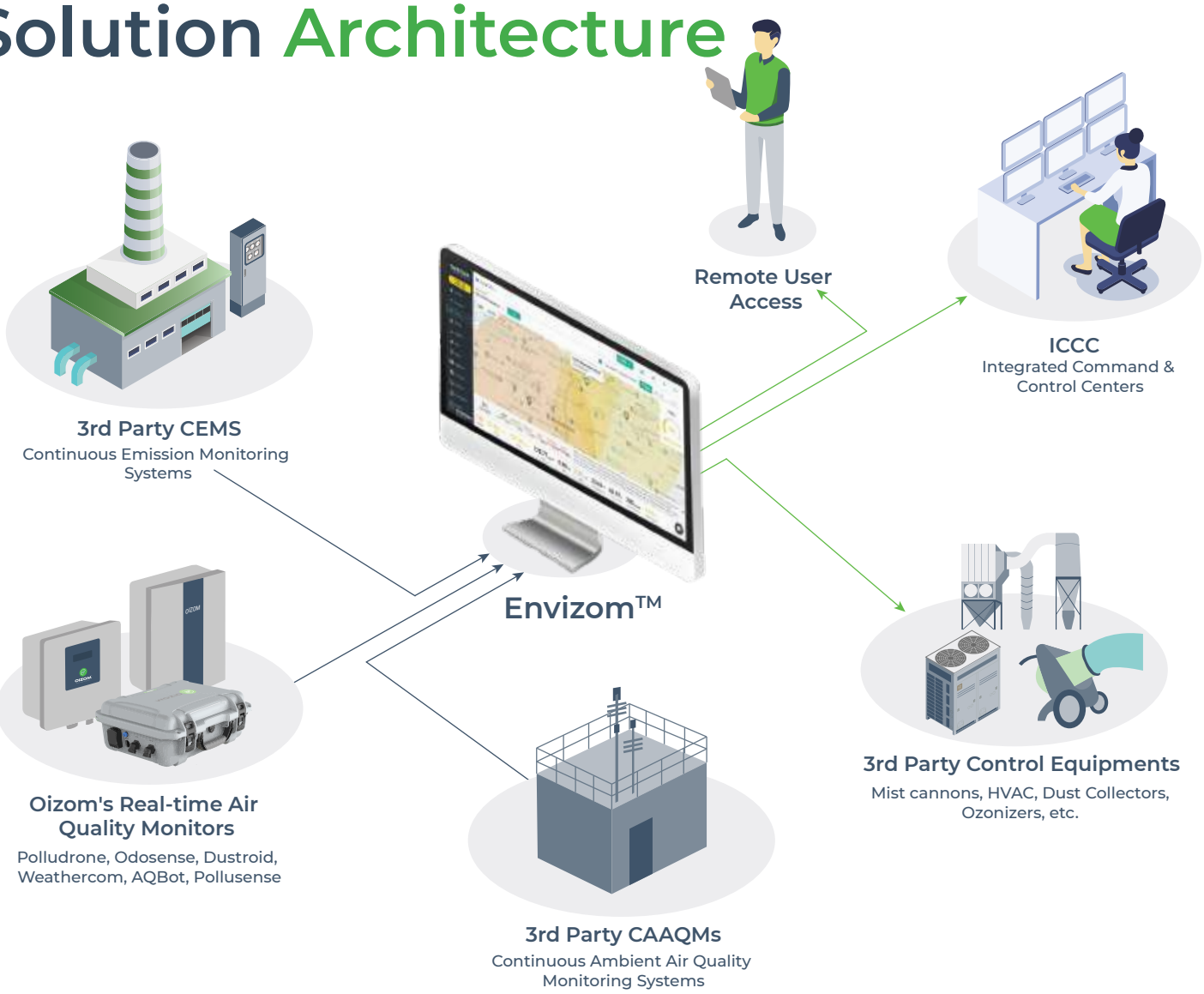
Sensing

Target Parameter	Refer Parameter Table
Gas Sample Mode	Natural Diffusion
Warm up time	1 hour(cold start) for Gas Monitoring
Response Time (t90)	< 60 seconds
Signal Refresh Rate	5 seconds
Measuring Range	Refer Parameter Table
Accuracy	<±5% FS (at 20±5°C/50±20%RH)
Sensor Life	Refer Parameter Table

	Connectivity Options	Specification
Wireless	GSM	Global 2G / 3G / 4G
	LTE	CAT-M1
	Wi Fi	AP Mode and Station Mode
		Satellite
Wired	ETHERNET	Static / DHCP Configuration
	Modbus	RS485 RTU / TCP
	RELAY	2 Channel Relay
	4-20 mA	4-20 mA Current Loop

Note: LoRa, NBIoT, Sigfox available as an option

Solution Architecture



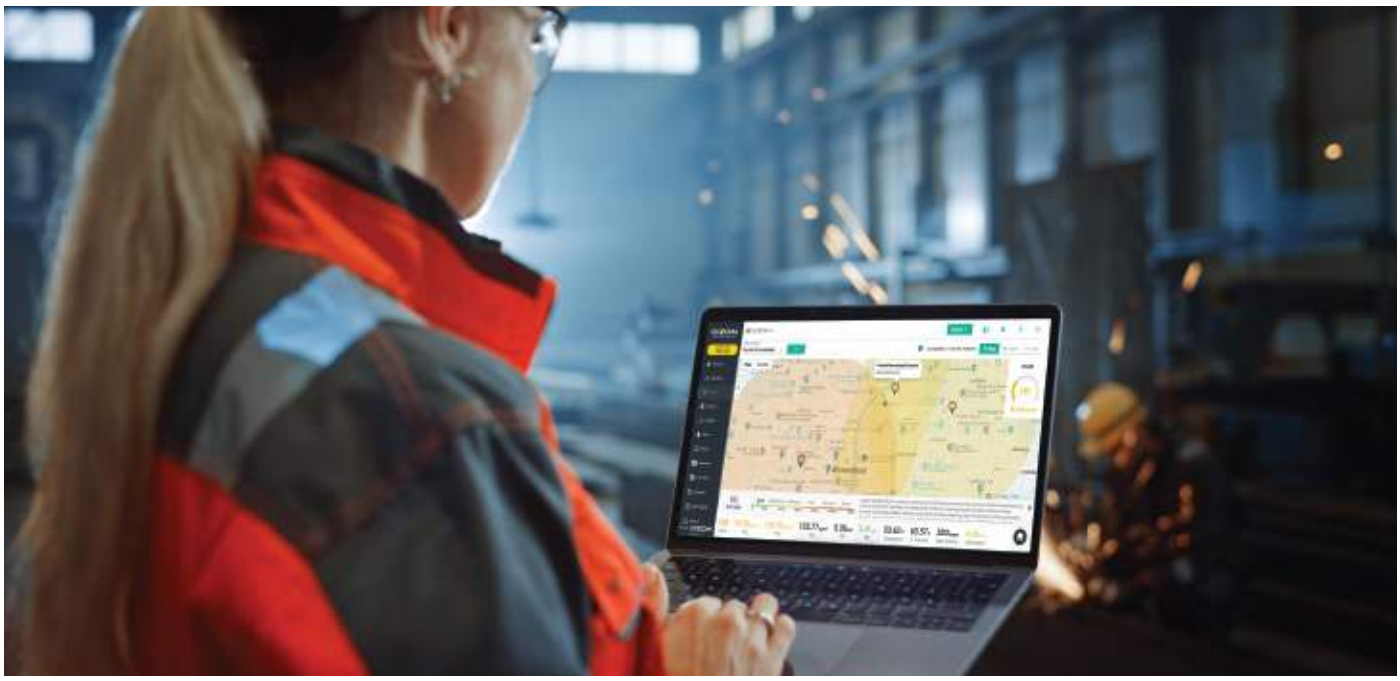
Envizom™

Data Visualisation and Analytics Platform

Envizom™ is an Environmental visualisation and analytics platform for real-time air quality data acquisition. Our Environmental Data Interpretation Engine, powered by Artificial Intelligence & Machine Learning algorithms, provides highly accurate data and actionable insights, empowering users to make well-informed decisions. Envizom™ uses secured HTTPS servers for data storage. Alternatively, this data can also be stored on-premise local servers.

The Report module offers immediate and automated daily / weekly / monthly reports on emissions within industrial facilities. The automation module enables users to activate third-party pollution control equipment based on user-defined thresholds to mitigate pollution. This also ensures timely and precise intervention to maintain optimal environmental conditions.

Envizom™ Capabilities



Envizom™ Capabilities

- Real-time Data
- Smart alerts
- Automated Reports
- Easy to Integrate
- Advanced Analytics
- Process Automation

Privacy First Platform

Data Privacy

The data shared with the client uses an encryption server through HTTPS Secure Socket layers. Envizom™ also uses AES encryption for connection that adds to data safety.

Data Ownership

Envizom™ creates a secured and encrypted password combination for the user login. Oizom® ensures 100% privacy of the data and doesn't share without relevant permissions.

Data Transparency

Data collected from Oizom® equipment runs through the Environment Data Interpretation Engine. It processes various algorithms and eliminates environmental impact interferences on the sensors.

SANS | OWASP | IEC 62443-4-1 | API Security Tested | 100w Cybersecurity Practices | TCM SECURITY

Case Studies

Monitoring dust particles at Amara Raja manufacturing plant

Amara Raja installed Oizom's AQBot™ to monitor dust particles in their industry, which enabled it to maintain a safe and controlled production environment.

India | AQbot | Industrial Monitoring

Monitoring H_2S at Johanna foods plants to reduce the impact on the local community

Johanna Food project installed AQBot™ at the exhaust of the carbon systems to monitor real-time data and identify the pinpoints of H_2S emission.

New Jersey | AQbot | Industrial Monitor

Detecting and Monitoring CH_2O in Australia

To ensure safe air quality for workers, Oizom's AQBot™ was installed with the help of Ektimo, in Australian workplaces to detect and monitor formaldehyde (CH_2O).

Australia | AQbot | EHS

Case Studies

Monitoring the levels of SO_2 & CH_4 at Reliance Chemical Products Ltd. Nigeria

Reliance Chemical Products Ltd. is accurately monitoring the levels of SO_2 and CH_4 to comply with environmental regulations and ensure the safety and well-being of workers.

Nigeria | AQbot | Industrial EHS

Dust Monitoring at Manufacturing Company in Hyderabad, India

Oizom® installed AQBot™ for PM monitoring in a manufacturing company named Grip Strapping Technologies Pvt. Ltd., located in Hyderabad.

India | 1 AQbot | Automation

Monitoring chlorine gas at a common effluent treatment plant

AQBot™ Cl_2 variant is monitoring chlorine gas at a CETP in Jetpur, India.

India | AQbot | Wastewater

Industrial Applications

Paper And Pulp Industry

H_2S - Lime kiln and evaporator
TVOC - Chemical pulping, bleaching and evaporator
CO_2 - Fuel combustion, lime kiln
CH_3SH - Digester, black liquor storage, recovery boiler

Textile Industry

NO - Sizing process
TVOC - High temperature ovens - drying and coating
Cl_2 - Bleaching process
PM - Cotton handling process and boiler

Leather Industry

H_2S & NH_3 - Beamhouse, unhairing and liming process
TVOC - Finishing operations - drying
PM - Storage and handling of powdered chemicals
Cl_2 - Pickling process

Fisheries Industry

H_2S - Bacteriological and enzymatic decay
NO - Cooking and drying - fishmeal industry
TVOC - Direct and indirect fried dryers
NH_3 - Fish rotting

Chemical Reaction

TVOC - Storage Tanks & Solvent Use process
NOx - Combustion Processes & Nitric Acid Production
SO_2 - Combustion of Sulfur-Containing Fuels & Sulfuric, Acid Production, Sulphonation
PM - Handling of Raw Materials

Thermal Power Plants

CO - Fuel combustion in boiler
NO - Natural gas/oil/coal based fuel combustion
CO_2 - Boiler fuel combustion
PM - Ash extraction plant

Food And Beverages Industry

Cl_2 - In various disinfecting activities
NH_3 - Refrigeration and cooling systems
CO_2 - Carbonation and fermentation processes

Steel plant

PM - Basic Oxygen Furnace and Blast furnace
NOx & CO - Blast Furnace
SO_2 - Coke Ovens & Sinter Plant Crushing plant

Wastewater Treatment Plants

CH_4 & CH_3SH - Sludge storage and anaerobic digestion
Cl_2 - Chlorination before outlet discharge

Meat Processing Plants

H_2S - Storage and ETP
CH_4 & CH_3SH - By product, storage & ETP

Dairy Industry

NH_3 - Manure storage and application
CH_4 - Manure in housing and enteric fermentation

All Industries

Noise - In every operation including rotary mechanical components

**This is an indicative list.*
Speak to our representative for your exact requirement.

Data and Calibration

1 Laboratory Calibration

All air quality monitoring systems are calibrated at the ISO/IEC 17025:2017 certified calibration laboratory using standard NIST traceable calibration gas standards as per the international guidelines by U.S. EPA.

2 Collocation Calibration

Post lab calibration, the monitors are operated adjacent to a custom-built reference station housing U.S. EPA-designated Federal Equivalent Method (FEM) for collocation calibration to ensure optimum data quality.

3 On-site Calibration

On-site calibration of Oizom devices can be performed using standard calibration gas cylinders of known concentration or by co-locating with a reference standard.

Other Oizom® Products

Odosense®
Odour Monitoring System

Odosense® monitors various odourful and toxic gases in the environment and provides insight into odour dispersion.

Dustroid®
Real-time Dust Monitor

Dustroid® is an online particulate monitoring system to measure a wide spectrum of particulate matter sizes.

Weathercom®
Automatic Weather Station

Weathercom® is an automatic weather station designed to measure various meteorological parameters.

Polludrone®
Ambient Air Quality Monitoring

Polludrone® is ideal for real-time ambient air quality monitoring for urban and industrial applications.

Pollusense™
Portable Air Quality Monitor

Pollusense™ is a Portable Air Quality Monitoring System that measures multiple toxic gases and particulate matter along with noise.

OIZOM®
REDEFINING RESOURCES

Trusted by
70+ Countries

Solutions Installed in
65+ Cities

Total Devices Installed
3000+

Total Population Covered
200 million+

Oizom Customers

JOHANNA FOODS, INC.
Raymond REALTY Go Beyond
ADITYA BIRLA GROUP
AMARA RAJA
VICEROY PROPERTIES
MAYFAIR APPRECIATING YOU
LM WIND POWER a GE Renewable Energy business
RAHEJA UNIVERSAL THE WORLD TO CONE
LOKHANDWALA
SHILP BUILDING EXCELLENCE
SWATI BUILDING TOMORROW
MONEY PLANT JUNCTION
SCL
ODISHA State Pollution Control Board, Odisha

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Changing the way Industries monitor air quality

Get in touch

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